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Installing Hardware Options for the Contivity VPN Switch

NORTEL NETWORKS™

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Contents

Preface 11

Conventions 11
Documentation 12
Related publications 12
Text 13
Acronyms 15
Hard-copy technical manuals 16
How to get help 17

Chapter 1
Contivity 4500 Option Installation 19

Opening the Contivity 4500 19
Removing the Contivity 4500 front bezel 19
Contivity 4500 system board layout 22
Installing Contivity 4500 LAN/WAN and hardware accelerator option cards 24
Installing Contivity 4500 DIMMs 26
Replacing a Contivity 4500 power supply 28
Replacing a Contivity 4500 hard disk drive 30

Chapter 2
Contivity 2500/2000/4000 Option Installation 33

Opening the Contivity 2500/2000/4000 33
Removing the Contivity 2500/2000/4000 front bezel 33
Removing the Contivity 2500/2000/4000 top cover 35
Contivity 2500/2000/4000 system board layout 36
Installing Contivity 2500/2000/4000 LAN/WAN option cards 38
Installing Contivity 2500/2000/4000 DIMMs 40
Replacing a Contivity 4000 power supply 41
Replacing a Contivity 4000 disk drive 42

Installing Contivity 2500/2000/4000 DIMMs 45
Memory option 46

Chapter 3
Contivity 2600 Option Installation 47

Opening the Contivity 2600 47
Removing the Contivity 2600 front bezel 48
Removing the Contivity 2600 top cover 49
Contivity 2600 system board layout 50
Installing LAN/WAN and hardware accelerator option cards 52
Installing Contivity 2600 DIMMs 54
Memory option 55

Chapter 4
Contivity 1600 Option Installation 57

Opening the Contivity 1600 57
Removing the Contivity 1600 front bezel 58
Removing the Contivity 1600 top cover 59
Contivity 1600 system board layout 61
Installing Contivity 1600 option cards 62
Installing Contivity 1600 DIMMs 65
Memory option 66

Chapter 5
Contivity 600 Option Installation 67

Opening the Contivity 600 69
Contivity 600 system board layout 71
Installing Contivity 600 option cards 72
Memory option 73

Figures

Figure 1 Removing the Contivity 4500 front bezel 20
Figure 2 Contivity 4500 front components 21
Figure 3 Sample Contivity 4500 system board 23
Figure 4 Installing 4500 LAN/WAN and hardware accelerator option cards 25
Figure 5 Installing Contivity 4500 DIMMs 26
Figure 6 Removing a Contivity 4500 power supply 28
Figure 7 Removing a Contivity 4500 hard disk drive 31
Figure 8 Removing the Contivity 2500/2000/4000 front bezel 34
Figure 9 Removing the Contivity 2500/2000/4000 top cover 35
Figure 10 Sample Contivity 2500/2000 system board 36
Figure 11 Sample Contivity 4000 system board 37
Figure 12 Installing 2500/2000/4000 LAN/WAN option cards 38
Figure 13 Installing Contivity 2500/2000/4000 DIMMs 40
Figure 14 Removing a Contivity 4000 power supply 41
Figure 15 Removing a Contivity 4000 hard disk drive 43
Figure 16 Installing Contivity 2500/2000/4000 DIMMs 45
Figure 17 Removing the Contivity 2600 front bezel 48
Figure 18 Removing the Contivity 2600 top cover 50
Figure 19 The Contivity 2600 system board 51
Figure 20 Installing LAN/WAN or hardware accelerator cards 52
Figure 21 Installing Contivity 2600 DIMMs 54
Figure 22 Removing the Contivity 1600 front bezel 58
Figure 23 Removing the Contivity 1600 power cord 59
Figure 24 Removing the Contivity 1600 top cover 60
Figure 25 Contivity 1600 system board 61
Figure 26 Removing the Contivity 1600 power cord 62
Figure 27 Installing Contivity 1600 LAN/WAN option cards 63
Figure 28 Installing Contivity 1600 option cards 64
Figure 29 Installing Contivity 1600 DIMMs 65
Figure 30 Removing the bottom screws 69

Figure 31 Removing the system from the chassis 70
Figure 32 Contivity 600 system board 71
Figure 33 Replacing the system into the chassis 73

Preface

This document describes how Nortel Networks* trained service personnel can install or replace hardware components for models 4500, 4000, 2600, 2500, 2000, 1600, 1500, and 600 of the Contivity VPN Switch*. The options include:

- Installing LAN and WAN option cards
- Installing hardware accelerator PCI cards
- Adding memory
- Replacing a power supply (4500 and 4000 only)
- Replacing a hard disk drive (4500 and 4000 only)

To install LAN, WAN, or hardware accelerator PCI cards and for system recovery operations, you must remove either the front bezel, the top cover, and/or the rear I/O panel tray depending on the type of Contivity product you are servicing. The procedures for each model are described in the following sections.

Conventions

This guide refers to the Contivity VPN Switch as the switch. It assumes that you are familiar with Web browsers and their general operation.

Documentation

This document uses the following conventions to distinguish among notes of varying importance.

Note: *Take notice*. Notes contain helpful suggestions or references to materials contained in this document.

Caution: *Be careful*. In this situation, you might do something that could result in damage to the equipment or loss of data.

Warning: *Danger.* You are in a situation that could cause bodily injury. Before working on equipment, beware of the hazards involved with electrical circuitry and standard practices for preventing accidents, such as disconnecting equipment from its power source.

Related publications

The following list shows the associated documentation that you will need to configure and manage the switch and describes the document's objectives.

- *Contivity VPN Switch Release Notes* provide the latest information, including known problems, workarounds, and special considerations.
- *Configuring the Contivity VPN Switch* (included on the CD) provides complete details to configure, monitor, and troubleshoot the switch.
- *Reference for the Contivity VPN Switch* provides reference information for each of the Web browser configuration screens.

Text

This guide uses the following text conventions:

angle brackets (< >)	Indicate that you choose the text to enter based on the description inside the brackets. Do not type the brackets when entering the command. Example: If the command syntax is `ping <ip_address>`, you enter `ping 192.32.10.12`
`bold Courier text`	Indicates command names, options, and text that you need to enter. Example: Use the **`dinfo`** command. Example: Enter **`show ip`** {**`alerts`**|**`routes`**}.
braces ({ })	Indicate required elements in syntax descriptions where there is more than one option. You must choose only one of the options. Do not type the braces when entering the command. Example: If the command syntax is `show ip {alerts|routes}`, you must enter either `show ip alerts` or `show ip routes`, but not both.
brackets ([ ])	Indicate optional elements in syntax descriptions. Do not type the brackets when entering the command. Example: If the command syntax is `show ip interface [-alerts]`, you can enter either `show ip interface` or `show ip interface -alerts`.
ellipsis points (. . .)	Indicate that you repeat the last element of the command as needed. Example: If the command syntax is `ethernet/2/1 [<parameter> <value>]...`, you enter `ethernet/2/1` and as many parameter-value pairs as needed.

italic text	Indicates new terms, book titles, and variables in command syntax descriptions. Where a variable is two or more words, the words are connected by an underscore. Example: If the command syntax is `show at <valid_route>`, *`valid_route`* is one variable and you substitute one value for it.
`plain Courier text`	Indicates command syntax and system output, for example, prompts and system messages. Example: `Set Trap Monitor Filters`
separator (->)	Shows menu paths. Example: Protocols -> IP identifies the IP option on the Protocols menu.
vertical line (|)	Separates choices for command keywords and arguments. Enter only one of the choices. Do not type the vertical line when entering the command. Example: If the command syntax is `show ip {alerts|routes}`, you enter either `show ip alerts` or `show ip routes`, but not both.
asterisk (*)	Indicates a trademark. See the Title Page for trademark information. Example: Contivity* Nortel Networks, the Nortel Networks logo, and Contivity are trademarks of Nortel Networks.

Acronyms

This guide uses the following acronyms:

AUI	attachment unit interface
BootP	Bootstrap Protocol
BRI	basic rate interface
CSMA/CD	carrier sense multiple access/collision detection
DLCMI	Data Link Control Management Interface
HDLC	High-level Data Link Control
IP	Internet Protocol
ISDN	Integrated Services Digital Network
ISO	International Organization for Standardization
ITU-T	International Telecommunication Union-Telecommunication Standardization Sector (formerly CCITT)
MAC	media accountants control
MAU	media access unit
MDI-X	medium dependent interface crossover
NBMA	nonbroadcast multi-access
OSPF	Open Shortest Path First
PPP	Point-to-Point Protocol
SMDS	Switched Multimegabit Data Service
SNMP	Simple Network Management Protocol
STP	shielded twisted pair
TPE	twisted pair Ethernet

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Chapter 1
Contivity 4500 Option Installation

This section describes how to install or replace hardware components for the Contivity 4500.

Warning: Wear an antistatic band when handling electronic components for the Contivity switch to avoid damaging them.

Note: Turn off the Contivity switch and unplug it before installing LAN or WAN cards, or system memory.

Opening the Contivity 4500

To replace power supplies, replace hard disk drives, or access the Contivity 4500's diskette drive for system recovery operations, you must remove the switch's front bezel. To install LAN or WAN cards, or install additional memory, you must remove the front bezel and then remove the switch's top cover as well.

Removing the Contivity 4500 front bezel

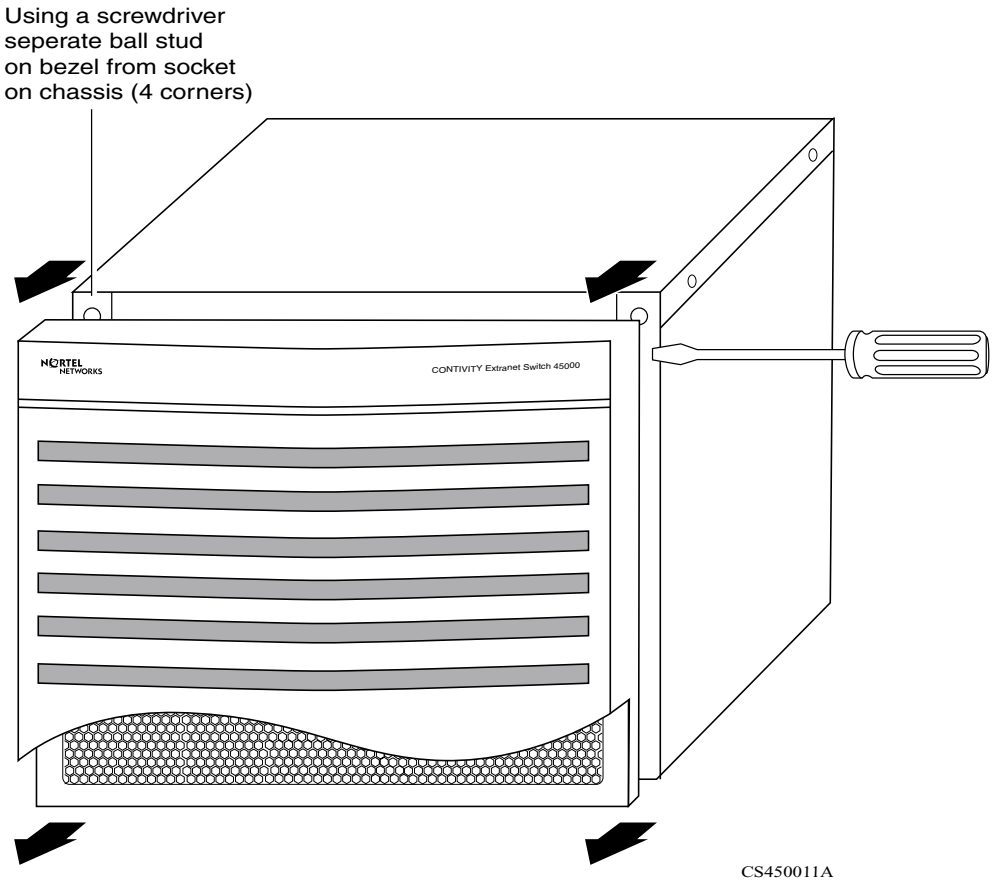
Note: Removing the front bezel on the Contivity 4500 system activates the chassis intrusion alarm only if the switch is turned on. This intrusion is reported to the system log file.

The first few times you remove the front bezel it will be somewhat difficult to remove. This is because the ball stud and sockets are new. After a few times, removal is easier. Remove the switch's front bezel as follows:

1. Insert a flat-head screwdriver into the slots on the lower left and right sides of the chassis, and pry the bezel forward.
2. Slide your fingers between the front bezel and the switch.
3. Pull the bezel forward firmly, separating the ball studs on the bezel from the sockets on the chassis.

   Figure 1 shows you how to remove the front bezel from the switch. You do not need to turn off the switch to remove the front bezel.

Figure 1 Removing the Contivity 4500 front bezel

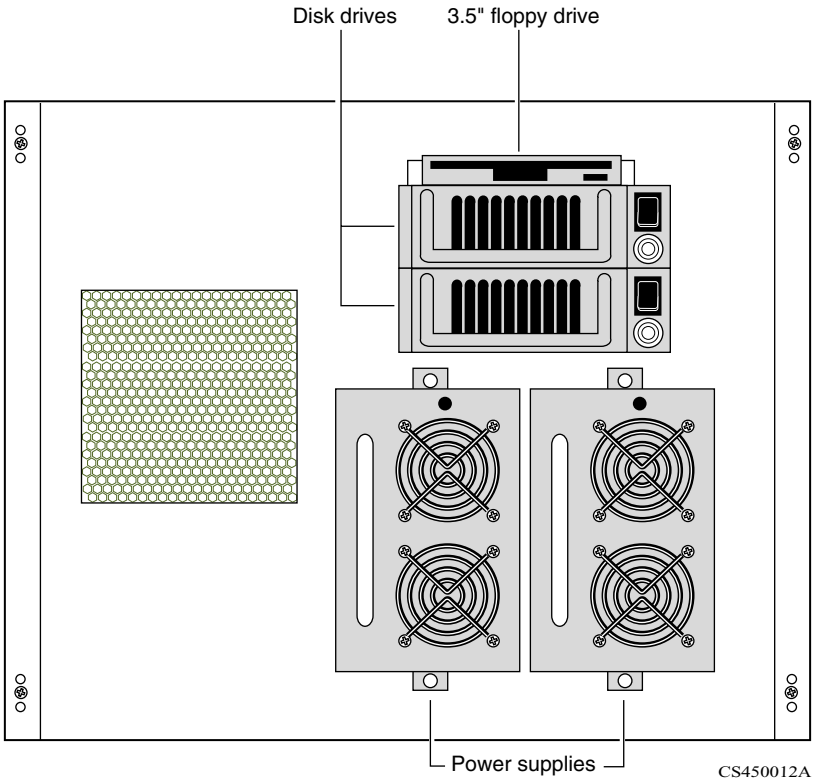


Remove the Contivity 4500 front bezel to:

- Replace a power supply.
- Replace a hard disk drive.
- Insert the recovery diskette.

Figure 2 shows the Contivity 4500 front components.

Figure 2 Contivity 4500 front components



Contivity 4500 system board layout

This section describes installing option cards onto the system board.

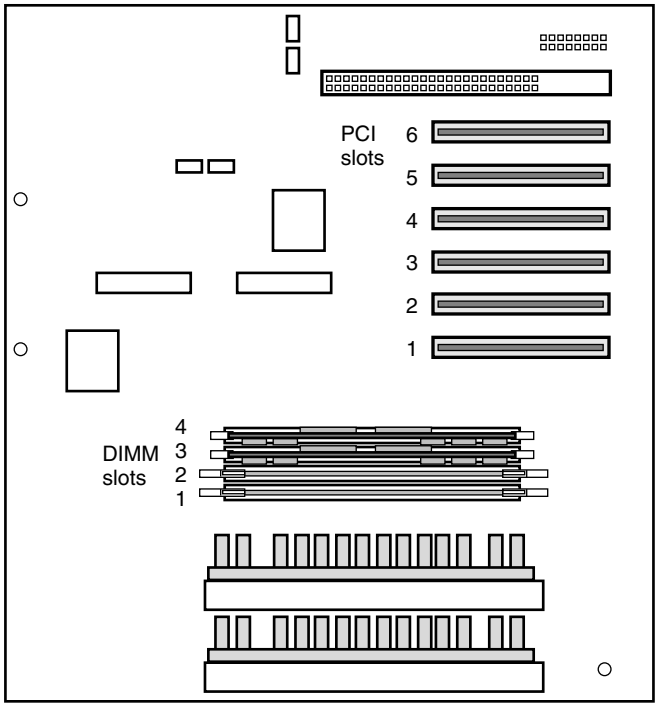
Warning: Only Nortel Networks trained service personnel should change existing hardware configurations. *Improper handling of internal components or assemblies, with the power connected, could cause severe injury.*

Note: Wear an antistatic band when handling electronic components for the switch to avoid damaging them.

Warning: Turn off the switch and unplug both power cords before installing LAN and WAN cards or system memory.

Figure 3 shows the Contivity 4500 system board, in particular the DIMMs and option card slots.

Figure 3 Sample Contivity 4500 system board



Installing Contivity 4500 LAN/WAN and hardware accelerator option cards

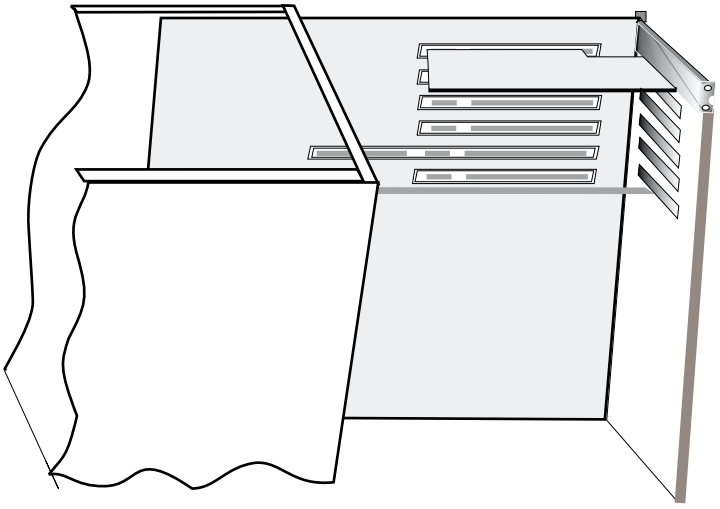
This section describes how you install option cards into the Contivity 4500 option card slide-out tray. The following procedure is for Nortel Networks trained service personnel only.

1. Turn off the switch and unplug both power cords from the power source.
2. Unscrew the four slotted thumb screws securing the slide-out tray. Pull out the tray by gripping it with the screws. It will only pull out half way.
3. Remove the filler panel screw and pull out the slot filler panel.
4. Slide the option card into the intended slot. Make sure the card seats firmly and evenly into the card slot. If the card is not seated properly, it will not work. Populate the slots from Slot 1 to Slot 6, in that order.
5. Secure the option card in the tray with the slot filler panel screw.
6. Push in the tray by gripping it with the screws. Tighten the four slotted thumb screws securing the slide-out tray.
7. Plug in both power cords to the power source and turn on the switch.

Caution: Be careful when inserting option cards into the Contivity 4500, because the slide-out tray is not fully supported once pulled out. You should support the back of the tray with your hand while inserting an option card.

Figure 4 shows you how to install LAN, WAN, or hardware accelerator option cards into the Contivity 4500. You can use the 6 slots for any mix of LAN and WAN or hardware accelerator cards; however, **you must populate the slots from bottom to top, in that order.**

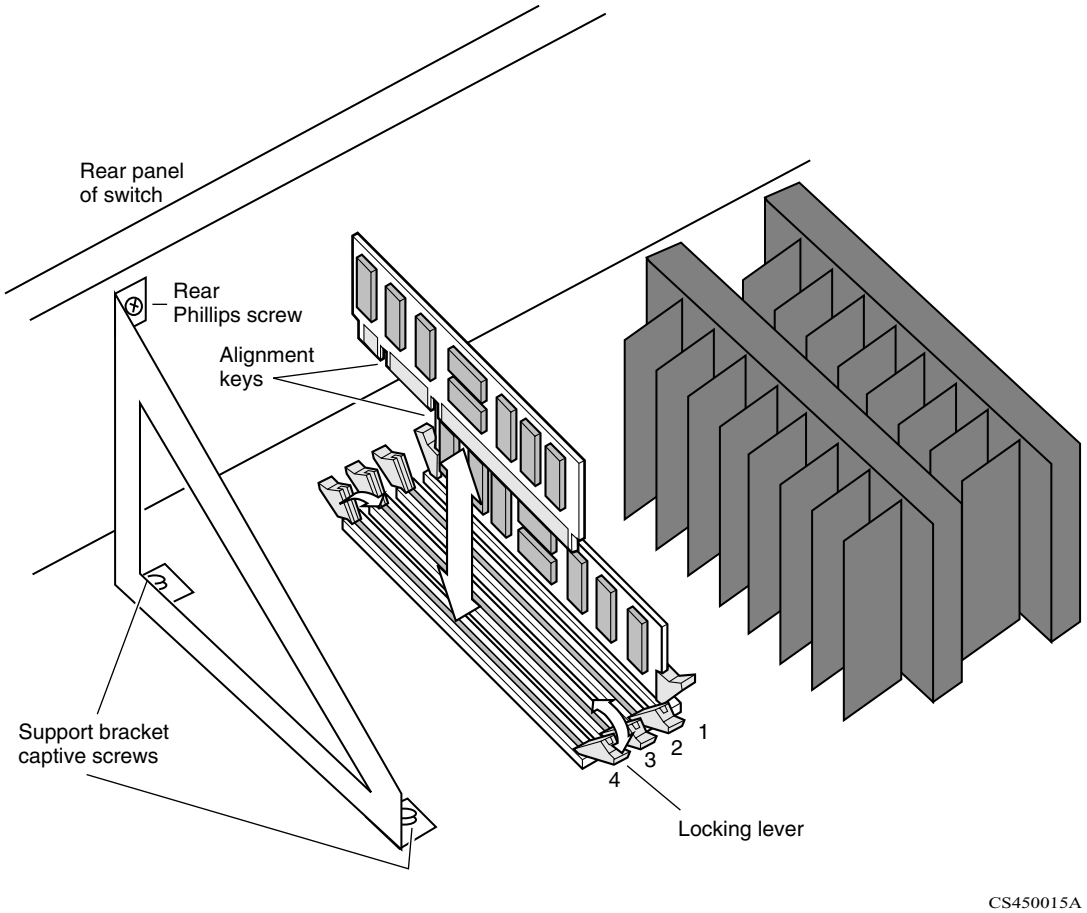
Figure 4 Installing 4500 LAN/WAN and hardware accelerator option cards



Installing Contivity 4500 DIMMs

Figure 5 shows you how to unlock a Dual Inline Memory Module (DIMM) in the Contivity 4500, and remove or install a DIMM. Install a DIMM in the next available slot (for example, if the DIMM #1 slot is populated, then add the next DIMM to the DIMM #2 slot).

Figure 5 Installing Contivity 4500 DIMMs



To install a DIMM into the Contivity 4500, follow these steps:

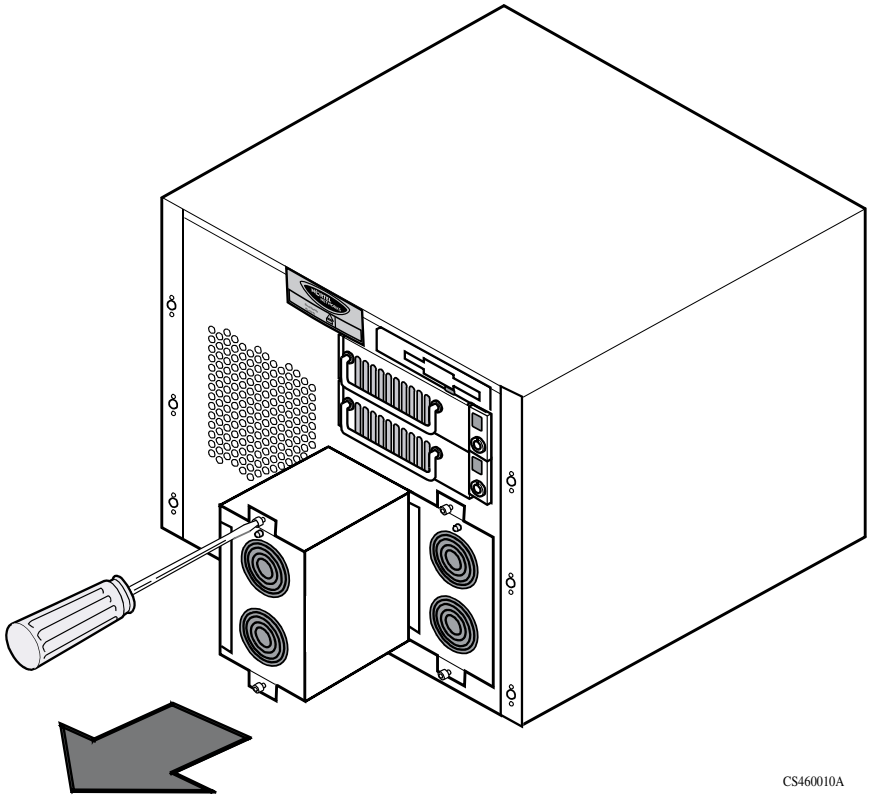
1. Turn off the switch.
2. Remove the power cords.
3. Unscrew the slide-out tray at the back of the unit and pull it out using the thumb screws.
4. Remove the support bracket by loosening the two secured captive screws and the rear Phillips screw.
5. Press down the locking levers on both sides of the next available DIMM slot to allow the new DIMM to be inserted.
6. Place the new DIMM in the slot, making sure to properly position the DIMM's alignment keys. Make sure the DIMM is pressed firmly into the socket.
7. Pull up the locking levers on both sides of the DIMM, and snap the DIMM into the socket.
8. Replace the support bracket by tightening the two secured captive screws and the rear Phillips screw.
9. Push in the slide-out tray and tighten the thumb screws.

Caution: Be careful when inserting option cards into the Contivity 4500, because the slide-out tray is not fully supported once pulled out. You should support the back of the tray with your hand while inserting an option card.

Replacing a Contivity 4500 power supply

Figure 6 shows you how to replace a hot-swappable power supply for the Contivity 4500.

Figure 6 Removing a Contivity 4500 power supply



To remove the power supply:

1. Remove the front bezel as shown in Figure 1.
2. Use a flat-head screwdriver to unscrew the top and bottom power supply screws.
3. Grab the handle and pull the power supply firmly, until the device disengages. Avoid the sharp sheet-metal edges.

4. Insert the new power supply. Make sure the power supply seats firmly in its socket and is locked in. Be sure the green power LED on the front of the power supply is on.
5. Secure the power supply screws tightly with a screwdriver.
6. Replace the front bezel.

Replacing a Contivity 4500 hard disk drive

Warning: Contivity 4500 hard disks are not hot-swappable.

When swapping a disk drive, you must first perform the steps listed below to ready the switch for the swap. This process is referred to as “warm-swapping” a disk drive.

Software

First save any data that has not yet been saved to the hard disk from the disk cache:

1. Launch a Web browser to the switch, and go to the Admin→File System display.
2. Click the button “Prepare selected device for removal.”

Hardware

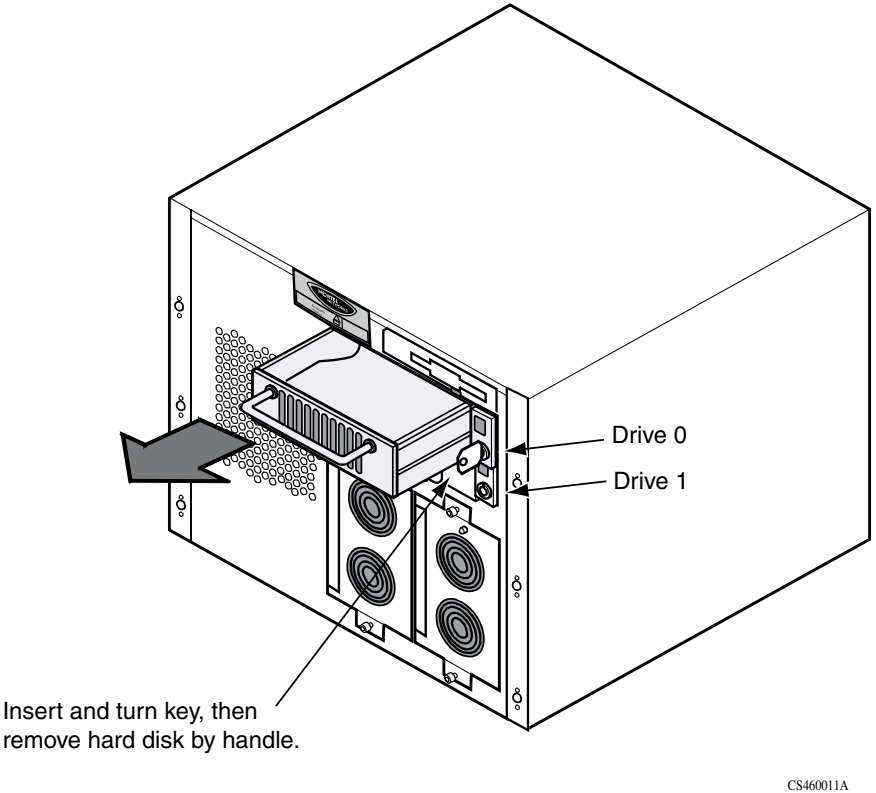
Remove the switch’s front bezel as shown in Figure 1, and then follow these steps:

1. Insert and turn the hard disk drive key to the right. The LED becomes a “U” for unlocked.

NOTE: Turning the key shuts off the power to the hard disk drive.

2. Pull the handle to remove the hard disk drive as shown in Figure 7.

Figure 7 Removing a Contivity 4500 hard disk drive



3 Insert the replacement hard drive fully, and lock it by turning the key clockwise. Make sure the hard disk drive LED shows the proper drive number.

4 Replace the front bezel.

5 Reload the software on the disk. Refer to "Using the Recovery Diskette," in *Configuring the Contivity VPN Switch* for more information on using the recovery diskette.

Software

Enable the switch by following these steps:

1 Use your Web browser to navigate to the switch, and go to the Admin→File System display.

2 Click on the drive and click the Enable button.

Chapter 2
Contivity 2500/2000/4000 Option Installation

This section describes how to install or replace hardware components for the Contivity 2500, 2000, and 4000.

Warning: Wear an antistatic band when handling electronic components for the Contivity switch to avoid damaging them.

Note: Turn off the Contivity switch and unplug it before installing LAN or WAN cards, or system memory.

Opening the Contivity 2500/2000/4000

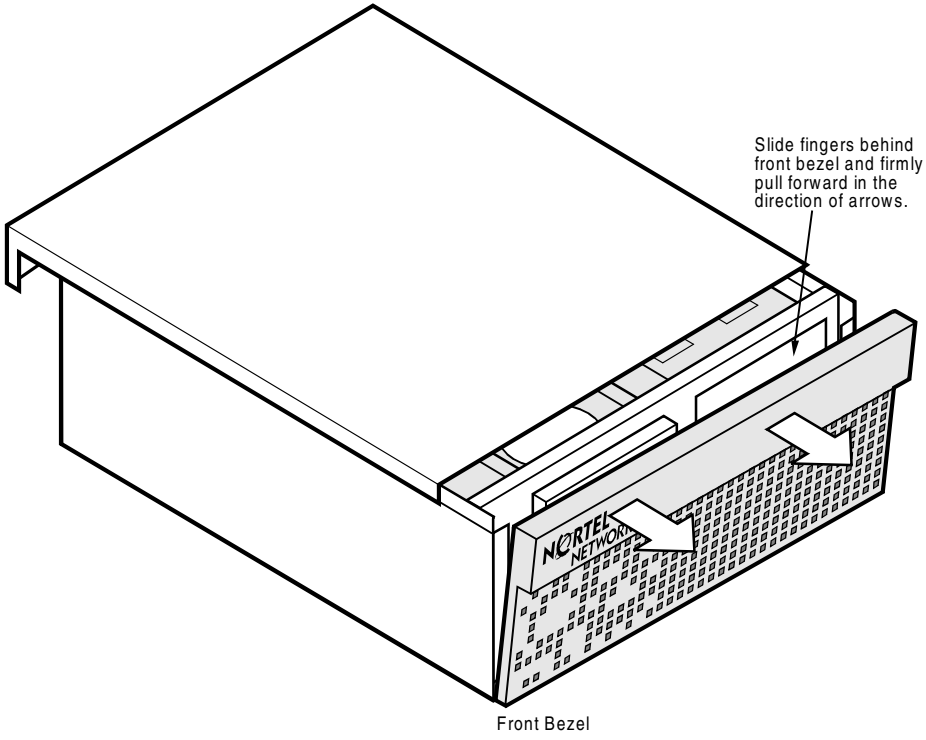
To install LAN or WAN cards, install hardware accelerator PCI cards, install additional memory, replace power supplies, or replace hard disk drives, you must remove the front bezel and then remove the switch's top cover. You may find it easier to work on the system when it has been removed from the rack.

Removing the Contivity 2500/2000/4000 front bezel

To access the Contivity 2500/2000/4000 disk drive for system recovery operations, you must first remove the switch's front bezel. Figure 8 shows you how to remove the front bezel and top cover from the Contivity 2500/2000/4000.

Note: You do not need to turn off the switch to remove the front bezel.

Figure 8 Removing the Contivity 2500/2000/4000 front bezel



The first few times you remove the front bezel it will be rather difficult to remove. This is because the ball stud and sockets are new. After a few times, removal is easier. Sliding the top cover back is optional; it allows you to get a better grip on the front bezel for removal.

Remove the switch's front bezel as follows:

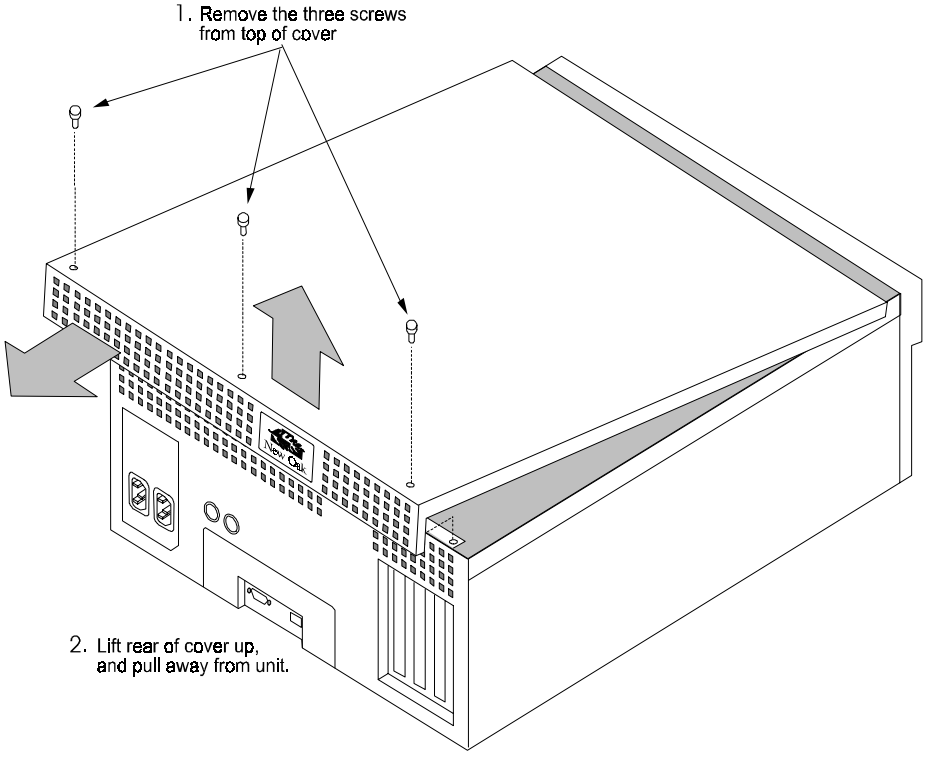
1. Optionally, remove the three screws at the top rear of the chassis, then slide the top cover back.
2. Slide your fingers between the front bezel and the switch.
3. Pull forward firmly.

Removing the Contivity 2500/2000/4000 top cover

Figure 9 shows you how to remove the top cover from the Contivity 2500/2000/4000. You must remove the cover to:

- Install LAN, WAN, or hardware accelerator cards
- Install additional memory

Figure 9 Removing the Contivity 2500/2000/4000 top cover



To remove the Contivity 2500/2000/4000 top cover:

1. Turn off the switch's power and unplug it.
2. Remove the three screws at the top rear of the chassis.
3. Slide the top cover back and move it away from the chassis.

Contivity 2500/2000/4000 system board layout

Figure 10 shows the Contivity 2500/200 system board, in particular the DIMMs, option card slots, and the CPU cooling fan. The Contivity 4000 system board is similar, but has **two** CPUs as shown in Figure 11.

Figure 10 Sample Contivity 2500/2000 system board

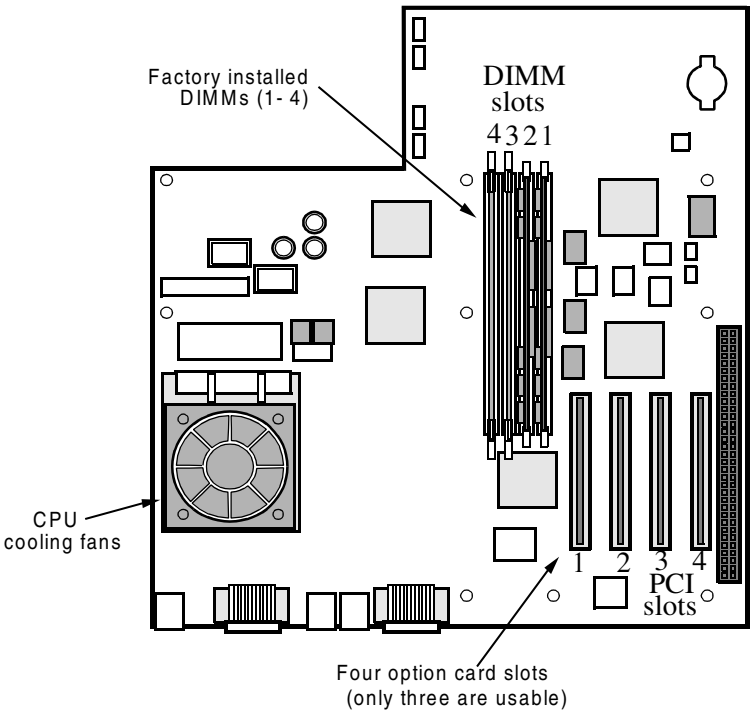
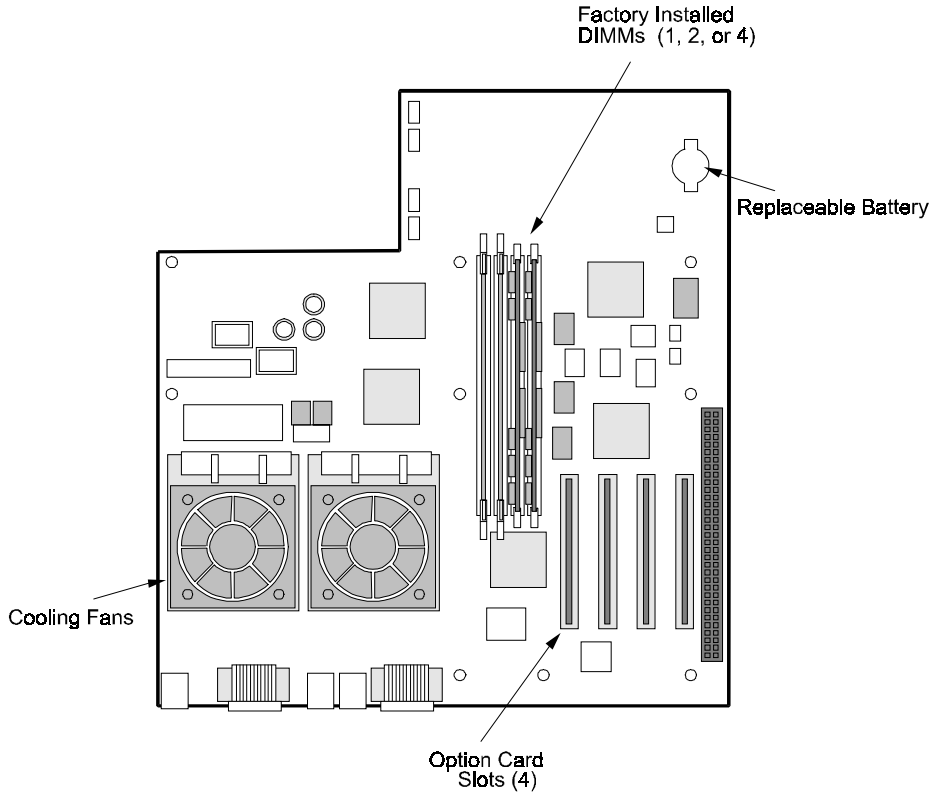


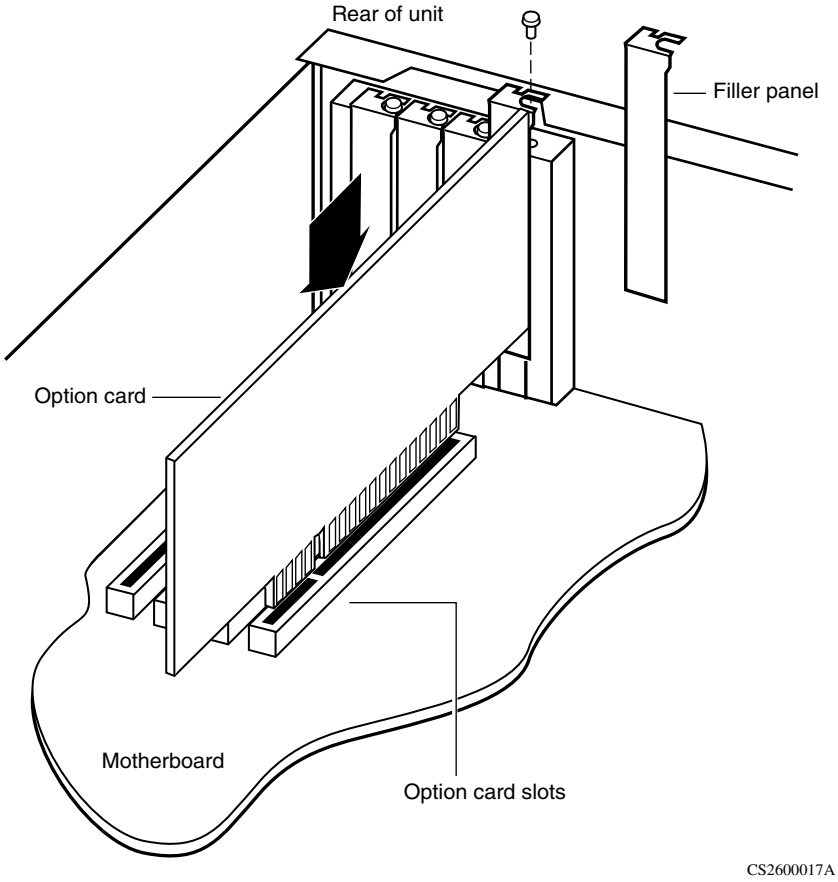
Figure 11 Sample Contivity 4000 system board



Installing Contivity 2500/2000/4000 LAN/WAN option cards

Figure 12 shows you how to install LAN or WAN option cards into a Contivity 2500/2000/4000. You can use Slots 1 to 3 for any mix of LAN and WAN cards. Note that Slot 4 is not supported.

Figure 12 Installing 2500/2000/4000 LAN/WAN option cards



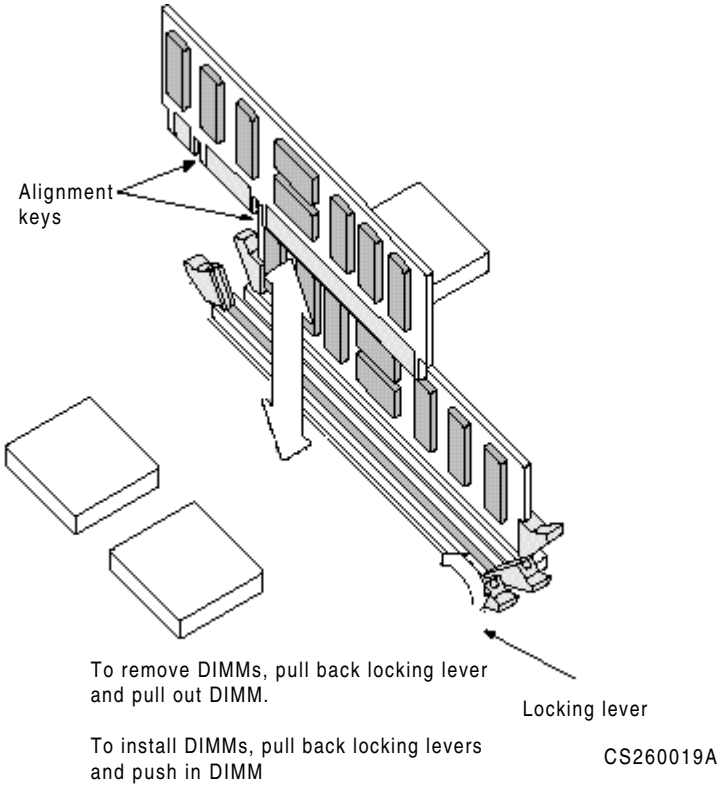
To install an option card:

1. Turn off the switch and remove the power cord.
2. Remove the front bezel and top cover as shown in Figure 9.
3. Remove the filler panel screw and pull out the filler panel as shown in Figure 12.
4. Slide the option card into the intended slot. Make sure the card seats firmly and evenly in the card slot. If the card is not seated properly, it will not work.
5. Replace the card and screw.
6. Replace the and top cover and front bezel.
7. Turn the switch on.

Installing Contivity 2500/2000/4000 DIMMs

Figure 13 shows you how to unlock a Dual Inline Memory Module (DIMM) in a Contivity 2500/2000/4000, and remove or install a DIMM. Install a DIMM in the next available slot (for example, if the DIMM #1 slot is populated, add the next DIMM to the DIMM #2 slot).

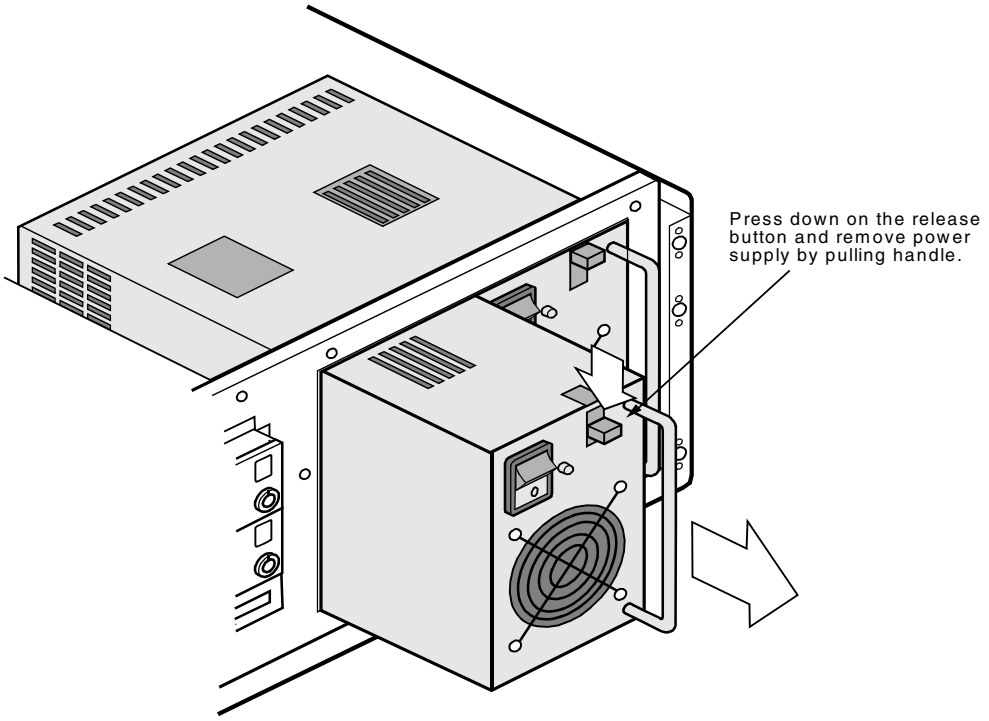
Figure 13 Installing Contivity 2500/2000/4000 DIMMs


Alignment keys
To remove DIMMs, pull back locking lever and pull out DIMM.
To install DIMMs, pull back locking levers and push in DIMM
Locking lever
CS260019A

Replacing a Contivity 4000 power supply

Figure 14 shows you how to replace a power supply for a Contivity 4000.

Figure 14 Removing a Contivity 4000 power supply



To remove a Contivity 4000 power supply, remove the switch's front bezel, then follow these steps:

1. Press the button down to turn off the power supply.
2. Press down on the release button.
3. Pull the handle forward.
4. Insert the new power supply. Make sure that the release button is pressed down while inserting the power supply.
5. Make sure the power supply is locked in.
6. Turn on the power supply and replace the front bezel.

Replacing a Contivity 4000 disk drive

To replace a Contivity 4000 disk drive, you must do the following:

Software

First save any data that has not yet been saved to the hard disk from the disk cache:

1. Use your Web browser to navigate to the switch, and go to the Admin→File System display.
2. Click the button "Prepare selected device for removal."

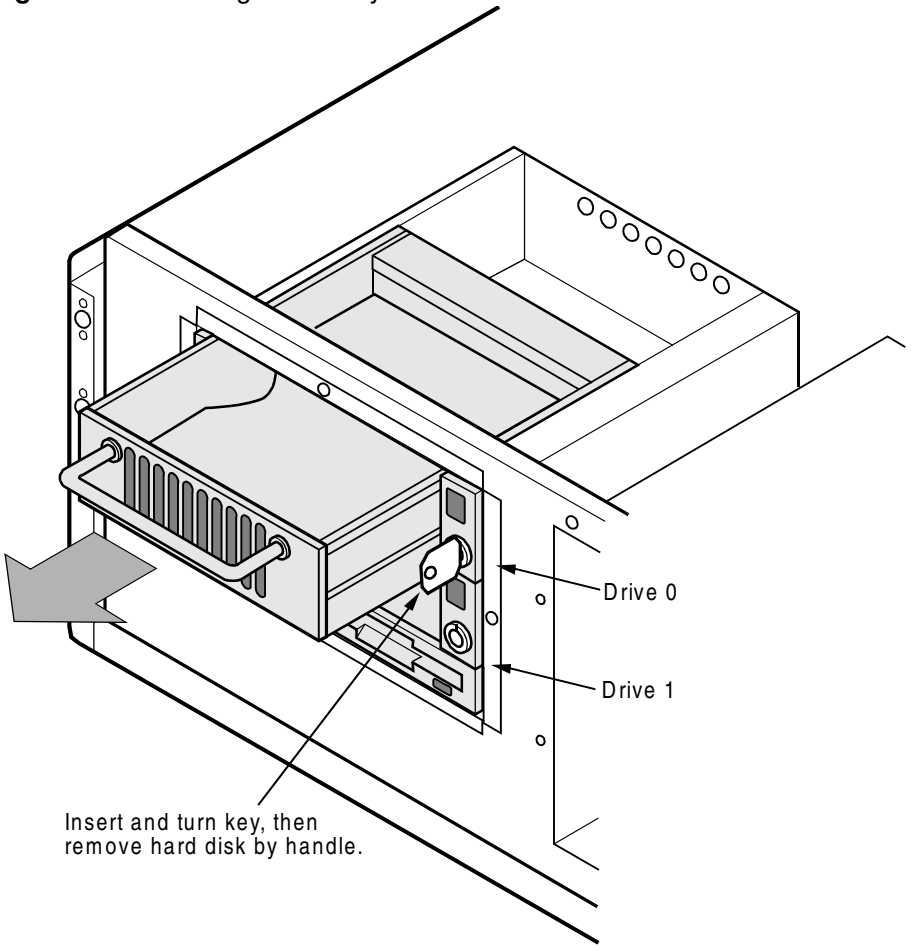
Hardware

Remove the switch's front bezel as shown in Figure 8; then follow these steps:

1. To remove a Contivity 4000 hard disk drive, insert and turn the hard disk drive key to the right as shown in Figure 15. The LED becomes a "U" for unlocked.

NOTE: Turning the key shuts off the power to the hard disk drive.

Figure 15 Removing a Contivity 4000 hard disk drive



2 Pull the handle to remove the hard disk drive.

3 Insert the replacement hard drive fully, and lock it by turning the key clockwise. Make sure the hard disk drive LED shows the proper drive number.

4 Replace the front bezel.

5 Reload the software on the disk. Refer to "Using the Recovery Diskette," in *Configuring the Contivity VPN Switch* for more information on using the recovery diskette.

Software

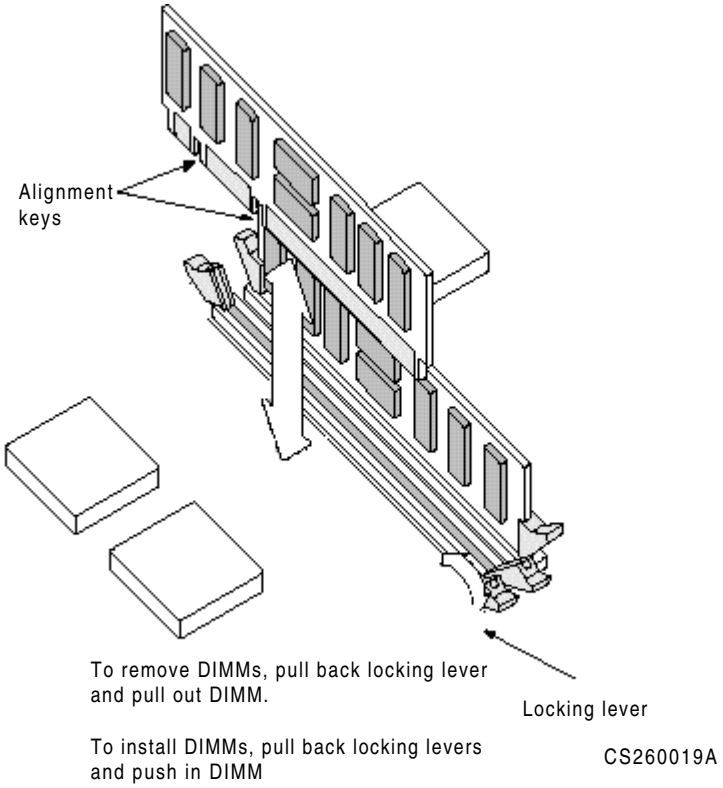
Enable the switch by following these steps:

1. Use your Web browser to navigate to the switch, and go to the Admin→File System display.
2. Click on the drive and click the Enable button.

Installing Contivity 2500/2000/4000 DIMMs

Figure 16 shows you how to unlock a Dual Inline Memory Module (DIMM) and remove or install the DIMM in the next available slot (for example, if the DIMM #1 slot is populated, add the next DIMM to the DIMM #2 slot).

Figure 16 Installing Contivity 2500/2000/4000 DIMMs


Alignment keys
To remove DIMMs, pull back locking lever and pull out DIMM.
To install DIMMs, pull back locking levers and push in DIMM
Locking lever
CS260019A

To replace or change a DIMM, follow these steps.

1. Turn off the switch.
2. Remove the power cord.
3. Remove the front bezel as shown in Figure 8.
4. Remove the top cover as shown in Figure 9.
5. Press down the locking levers on both sides of the next available slot to allow the new DIMM to be inserted.
6. Pull the DIMM up to remove it from the slot.
7. Place a new DIMM in the slot, making sure to properly position the DIMM's alignment keys. Make sure the DIMM is pressed firmly into the socket.
8. Pull up the locking levers on both sides of the DIMM, and snap the DIMM into the slot.
9. Replace the top cover.
10. Replace the front bezel.

Memory option

The Contivity 2500/2000/4000 ships with 128 Mbits of memory installed. An additional 128 Mbits can be installed. To increase the memory, contact Nortel Networks Customer Support.

Chapter 3
Contivity 2600 Option Installation

This section describes how to install or replace hardware components for the Contivity 2600.

Warning: Wear an antistatic band when handling electronic components for the Contivity switch to avoid damaging them.

Note: Turn off the Contivity switch and unplug it before installing LAN or WAN cards, or system memory.

Opening the Contivity 2600

To access the Contivity 2600 disk drive for system recovery operations, you must first remove the switch's front bezel. To install LAN or WAN cards, install hardware accelerator PCI cards, install additional memory, replace power supplies, or replace hard disk drives, you must remove the front bezel and then remove the switch's top cover. You may find it easier to work on the system when it has been removed from the rack.

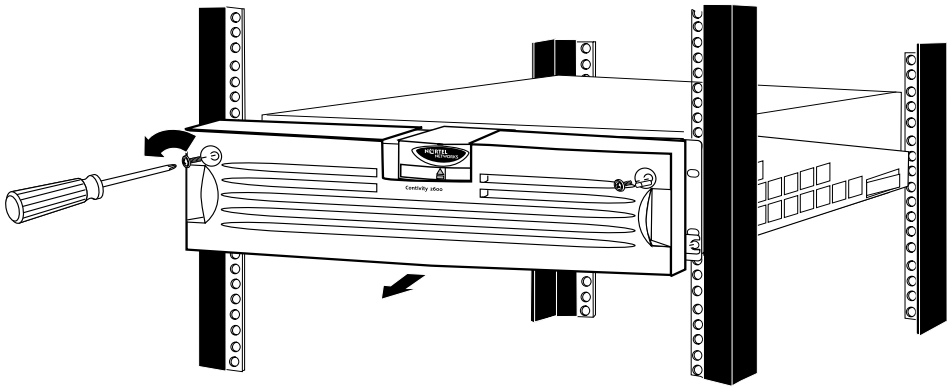
Removing the Contivity 2600 front bezel

Note: Removing the front bezel on the Contivity 2600 system activates the chassis intrusion alarm whether or not the switch is turned on. This intrusion is reported to the system log file.

You must remove the bezel to insert the recovery diskette. Note that you **do not** need to turn off the switch if you are **only** removing the front bezel. Figure 17 shows you how to remove the front bezel from the switch.

Caution: When handling the switch outside of the rack-mount shelf, do not use the part labeled with the Nortel Networks logo and the LEDs as a handle.

Figure 17 Removing the Contivity 2600 front bezel



CS260015A

The first few times you remove the front bezel it will be rather difficult to remove. This is because the ball studs and socket clips are new. After a few times, removal is easier.

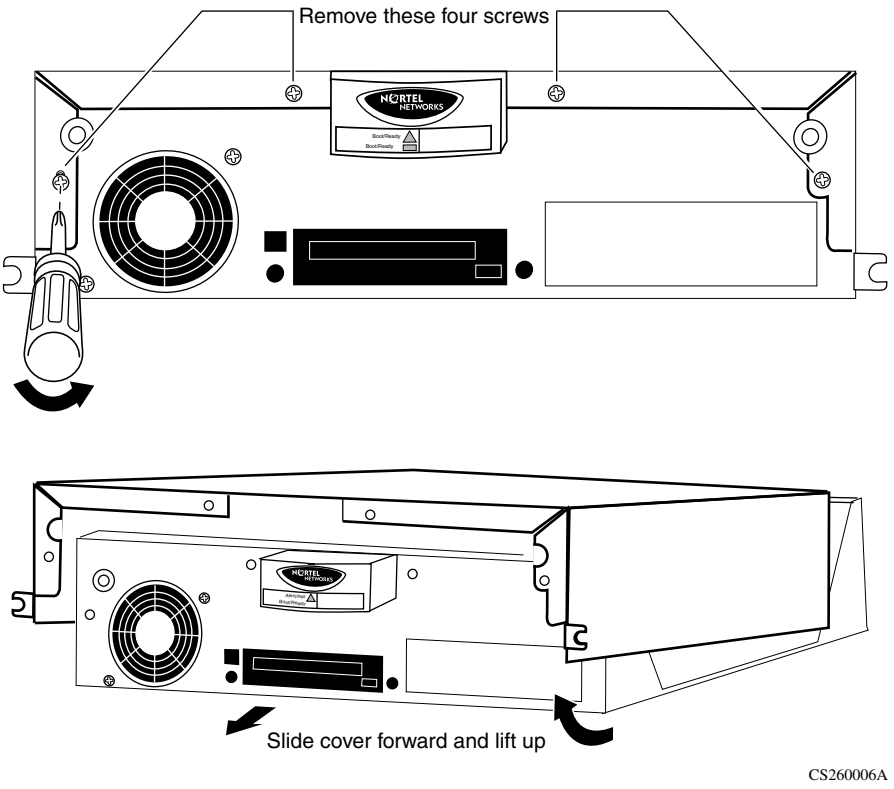
To remove the front bezel, you need a Phillips screwdriver.

1. Turn each of the two screws on the front bezel a quarter turn counter-clockwise.
2. Grip the two handles and pull the bezel towards you firmly to unsnap it from the chassis.

Removing the Contivity 2600 top cover

To remove the cover to install LAN, WAN, or hardware accelerator cards or to install additional memory, you must remove the switch's front bezel and then you must remove the switch's top cover. Figure 18 shows you how to remove the top cover from the switch.

Figure 18 Removing the Contivity 2600 top cover

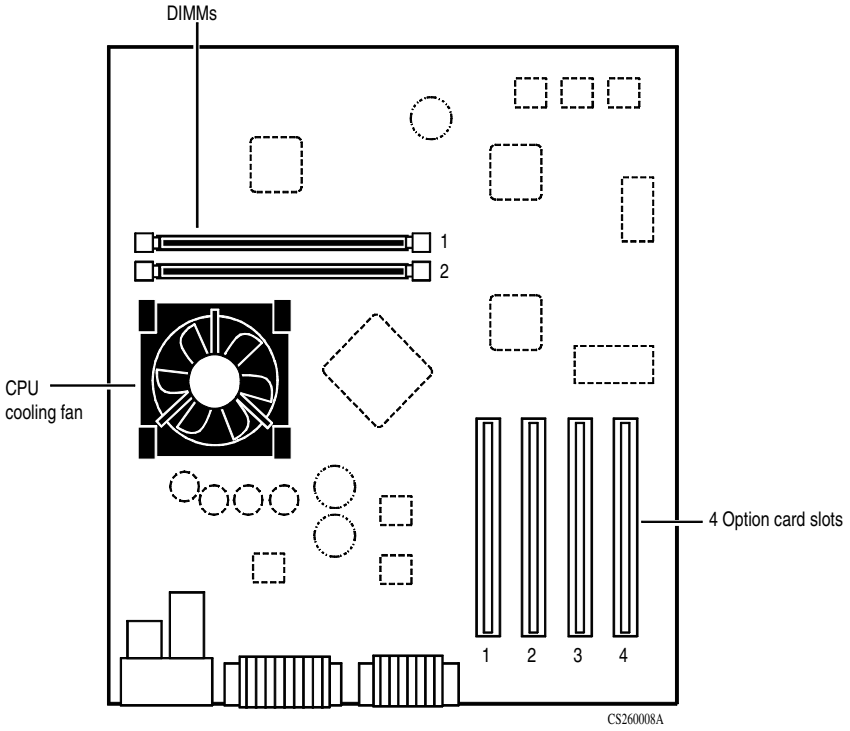


➨ Slide the top cover forward approximately 1/4 inch, then lift the lid 2 to 3 inches and move it away from the chassis.

Contivity 2600 system board layout

Figure 19 shows the Contivity 2600's system board, in particular the DIMMs, option card slots, and the CPU cooling fan.

Figure 19 The Contivity 2600 system board



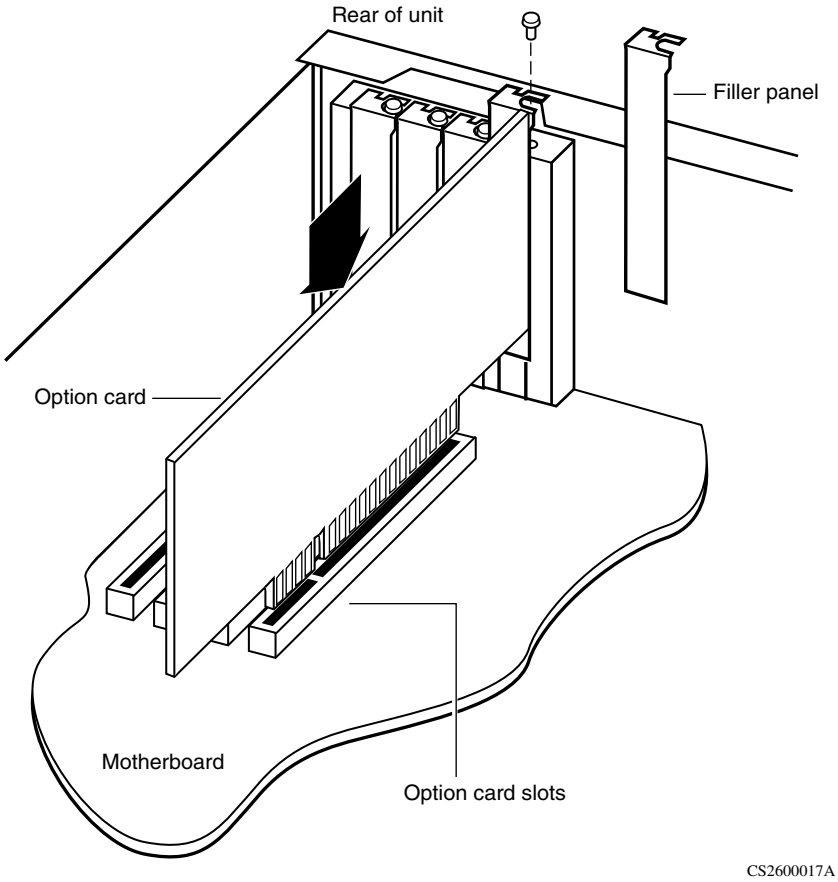
Warning: Beware of danger if battery is incorrectly replaced. Replace with the *same* or an *equivalent battery* only, as recommended by the manufacturer's instructions.

Danger: In spite of the above warning, which is mandated for regulatory approval, *you should not change the battery.* If you suspect a dead battery, contact Nortel Networks Customer Support.

Installing LAN/WAN and hardware accelerator option cards

Figure 20 shows you how to install LAN, WAN, or hardware accelerator option cards into the switch. You can use Slots 1 to 4 for any mix of LAN and WAN cards.

Figure 20 Installing LAN/WAN or hardware accelerator cards



To remove the front bezel and cover, you need a Phillips screwdriver.

1 Power off the switch.

2 Remove the power cord.

3 Remove the front bezel as shown in Figure 17.

4 Remove the top cover as shown in Figure 18.

5 Remove the filler panel screw and pull out the filler panel as shown in Figure 20.

Caution: Be careful when inserting option cards into the Contivity 2600, as the slide-out tray is not fully supported once pulled out. You should support the back of the tray with your hand while inserting an option card.

6 Slide the option card into the intended slot. Make sure the card seats firmly and evenly into the card slot. If the card is not seated properly, it will not work.

7 Replace the card and screw.

8 Replace the top cover.

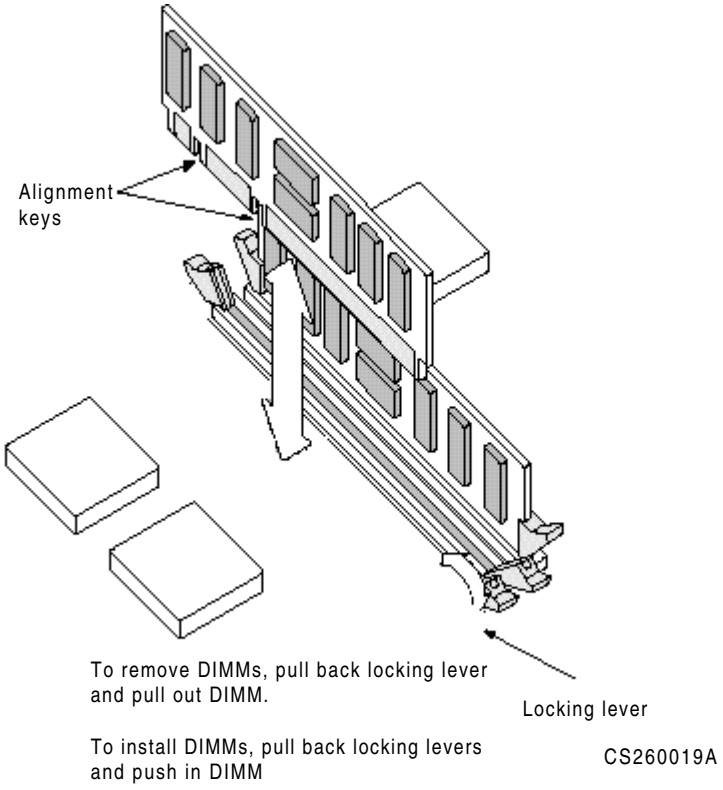
9 Replace the front bezel.

Caution: Be careful when inserting option cards into the Contivity 2600, as the slide-out tray is not fully supported once pulled out. You should support the back of the tray with your hand while inserting an option card.

Installing Contivity 2600 DIMMs

Figure 21 shows you how to unlock a Dual Inline Memory Module (DIMM) and remove or install the DIMM in the next available slot (for example, if the DIMM #1 slot is populated, add the next DIMM to the DIMM #2 slot).

Figure 21 Installing Contivity 2600 DIMMs


Alignment keys
To remove DIMMs, pull back locking lever and pull out DIMM.
To install DIMMs, pull back locking levers and push in DIMM
Locking lever
CS260019A

To replace or change a DIMM, follow these steps.

1. Turn off the switch.
2. Remove the power cord.
3. Remove the front bezel as shown in Figure 17.
4. Remove the top cover as shown in Figure 18.
5. Press down the locking levers on both sides of the next available slot to allow the new DIMM to be inserted.
6. Pull the DIMM up to remove it from the slot.
7. Place a new DIMM in the slot, making sure to properly position the DIMM's alignment keys. Make sure the DIMM is pressed firmly into the socket.
8. Pull up the locking levers on both sides of the DIMM, and snap the DIMM into the slot.
9. Replace the top cover.
10. Replace the front bezel.

Memory option

The Contivity 2600 ships with 128 Mbits of memory installed. An additional 128 Mbits can be installed. To increase the memory, contact Nortel Networks Customer Support.

Chapter 4
Contivity 1600 Option Installation

This chapter describes how Nortel Networks trained service personnel can change existing hardware configurations, including installing LAN and WAN cards and how to add memory for the Contivity 1600.

Warning: Wear an antistatic band when handling electronic components for the Contivity switch to avoid damaging them.

Note: Turn off the Contivity switch and unplug it before installing LAN or WAN cards, or system memory.

Opening the Contivity 1600

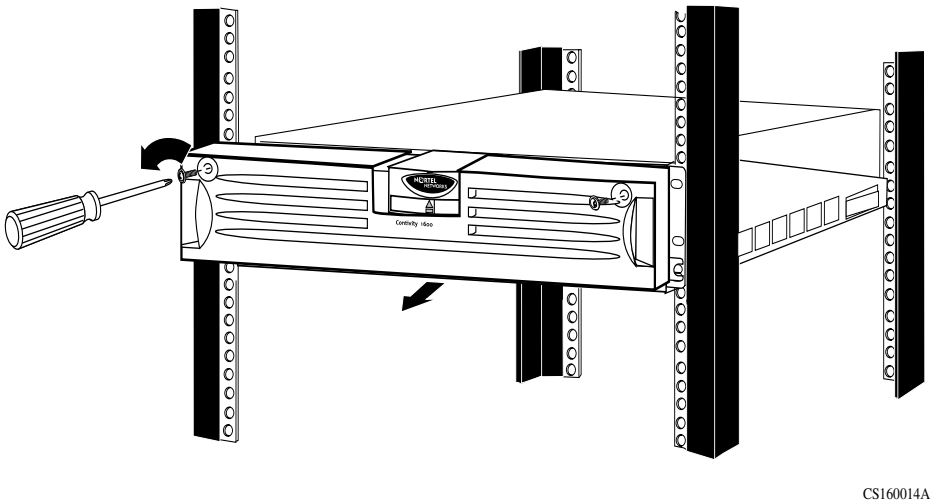
To access the Contivity 1600's diskette drive for system recovery operations, you must first remove the switch's front bezel. To install LAN or WAN cards, install hardware accelerator PCI cards, install additional memory, replace power supplies, or replace hard disk drives, you must remove the front bezel and then remove the switch's top cover. You may find it easier to work on the system when it has been removed from the rack.

Removing the Contivity 1600 front bezel

You must remove the bezel to insert the recovery diskette. Note that you **do not** need to turn off the Contivity switch if you are only removing the front bezel. Figure 22 shows you how to remove the front bezel from the Contivity switch.

Warning: When handling the Contivity switch outside of the rack-mount shelf, do not use the part labeled with the Nortel Networks logo and the LEDs as a handle.

Figure 22 Removing the Contivity 1600 front bezel



Note that the first few times you remove the front bezel it will be rather difficult to remove. This is because the ball studs and socket clips are new. After a few times, removal is easier.

To remove the front bezel you need a Phillips screwdriver.

1. Turn each of the two screws on the front bezel a quarter turn counter-clockwise.
2. Grip the two handles and firmly pull the bezel towards you to unsnap it from the chassis.

Removing the Contivity 1600 top cover

To install LAN or WAN cards, or to install additional memory, you must remove the Contivity 1600's front bezel and then the switch's top cover.

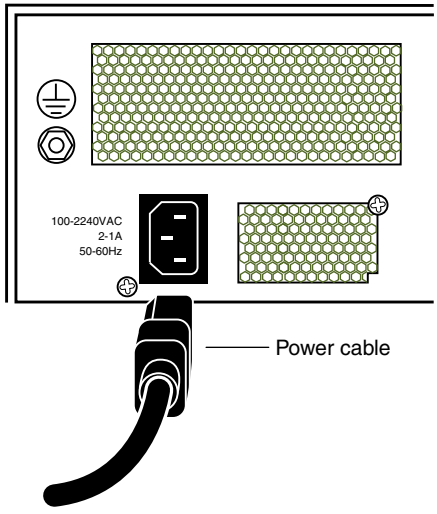
To remove the cover you need a Phillips screwdriver.

Note: You **do** need to turn off the Contivity switch to remove the top cover.

1 Turn off the switch's power and remove the power cord.

Figure 23 shows how to remove the power cord from the Contivity switch.

Figure 23 Removing the Contivity 1600 power cord

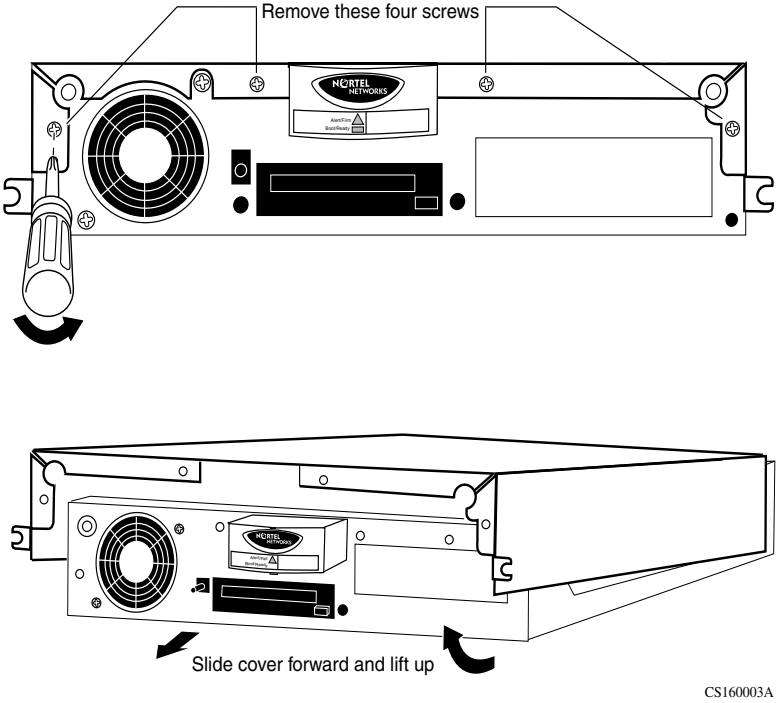


2 Turn each of the two screws on the front bezel a quarter turn counter-clockwise.

3 Grip the two handles and firmly pull the bezel towards you to unsnap it from the chassis. Do not use the part labeled with the Nortel Networks logo and the LEDs as a handle.

4 Use the Phillips screwdriver to remove the four screws that secure the cover to the chassis, as shown in Figure 24.

Figure 24 Removing the Contivity 1600 top cover

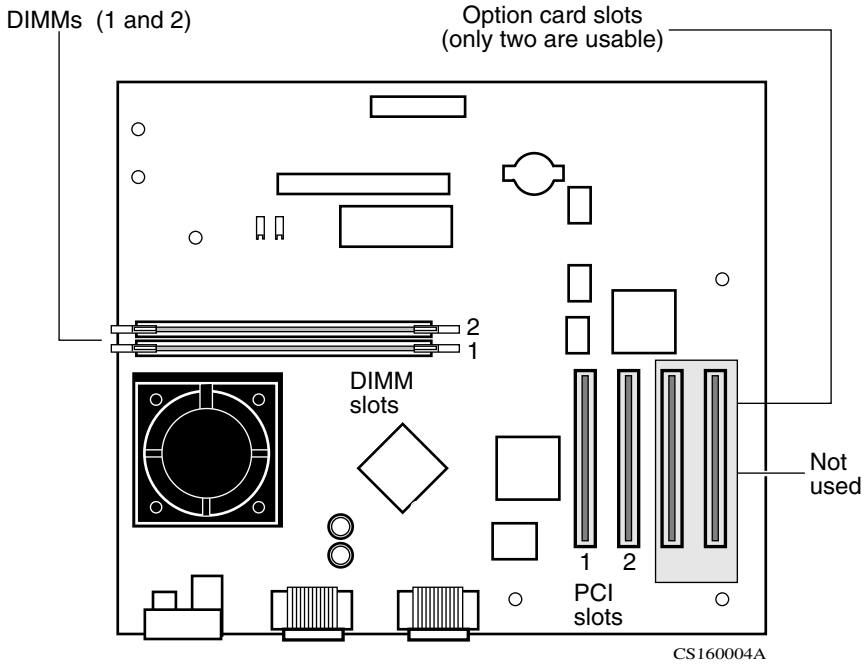


5 Slide the top cover forward approximately 1/4 inch, then lift the lid 2 to 3 inches, and move it away from the chassis.

Contivity 1600 system board layout

Figure 26 shows the Contivity 1600's system board, in particular the DIMMs, option card slots, and the CPU cooling fan.

Figure 25 Contivity 1600 system board



Warning: Beware of danger if the battery is incorrectly replaced. Replace with the *same* or an *equivalent battery* only, as recommended by the manufacturer's instructions.

Danger: In spite of the above warning, which is mandated for regulatory approval, *you should not change the battery.* If you suspect a dead battery, contact Nortel Networks Customer Support.

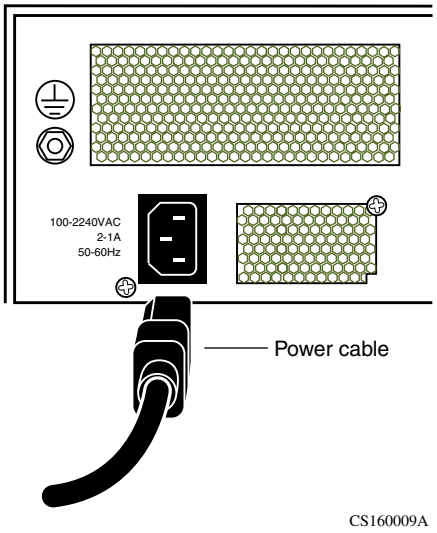
Installing Contivity 1600 option cards

This section shows you how to install LAN or WAN option cards in the Contivity 1600.

1 Turn off the switch.

2 Remove the power cord, as shown in Figure 26.

Figure 26 Removing the Contivity 1600 power cord

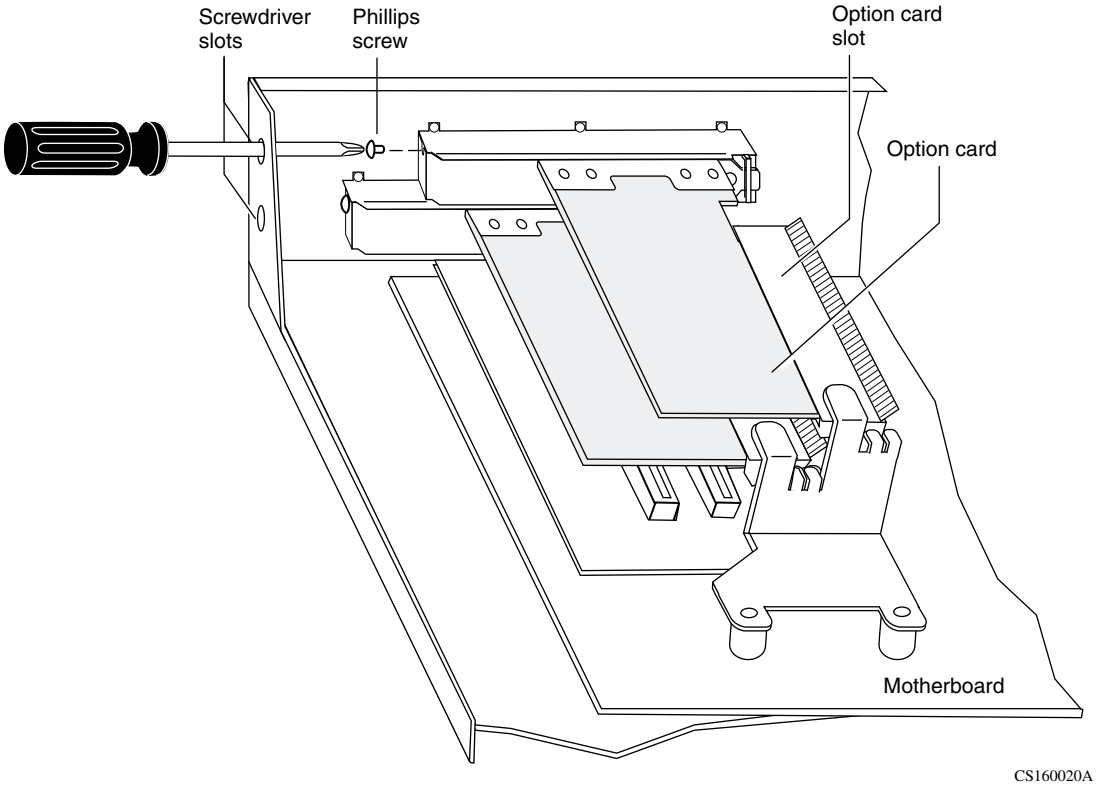


3 Remove the front bezel, as shown in Figure 22.

4 Remove the top cover, as shown in Figure 23.

5 Remove the filler panel screw and pull out the filler panel, as shown in Figure 27.

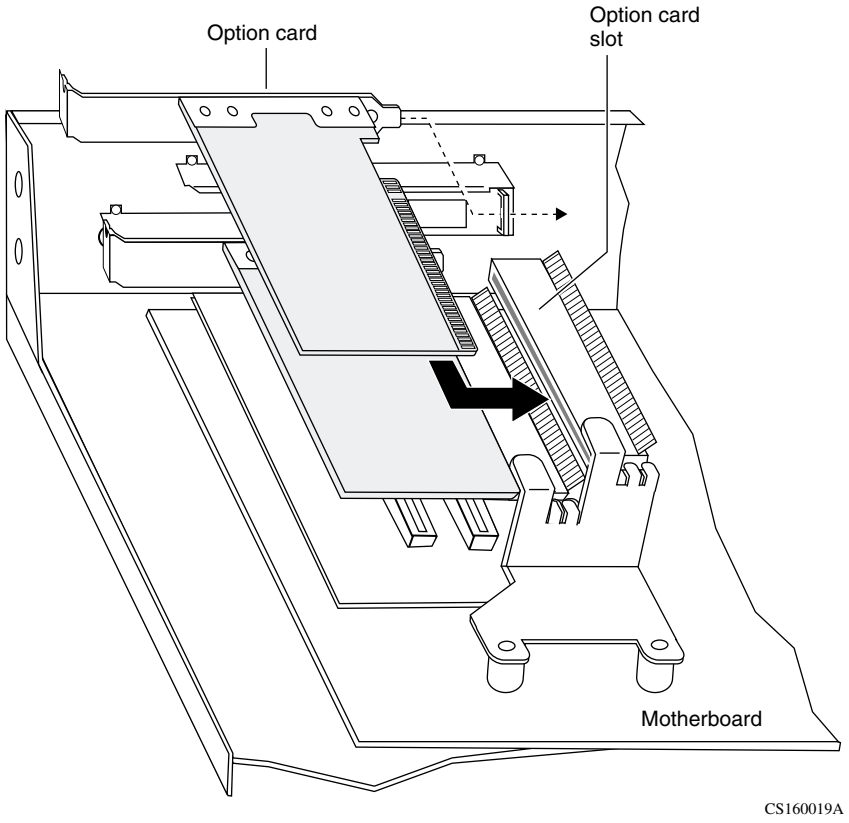
Figure 27 Installing Contivity 1600 LAN/WAN option cards



6 Slide the option card into the intended slot, as shown in Figure 28.

Make sure the card seats firmly and evenly into the card slot. If the card is not seated properly, it will not work.

Figure 28 Installing Contivity 1600 option cards



7 Replace the card and screw.

8 Replace the top cover.

9 Replace the front bezel.

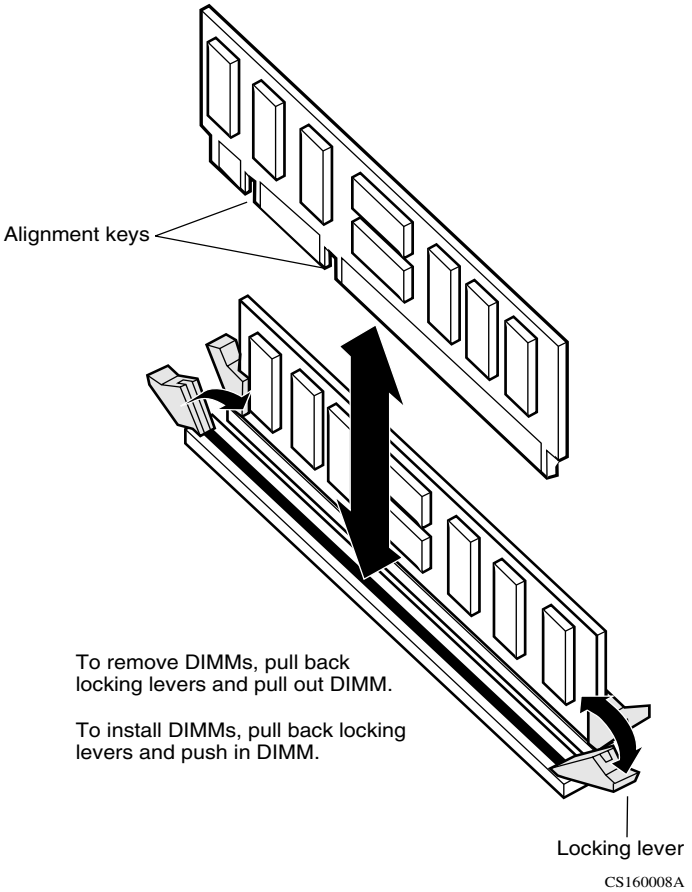
10 Reconnect the power cord.

11 Turn on the switch.

Installing Contivity 1600 DIMMs

Figure 29 shows you how to unlock a DIMM and remove or install the DIMM in the next available slot (for example, if the DIMM # 1 slot is populated, than add the next DIMM to the DIMM # 2 slot).

Figure 29 Installing Contivity 1600 DIMMs


Alignment keys
To remove DIMMs, pull back locking levers and pull out DIMM.
To install DIMMs, pull back locking levers and push in DIMM.
Locking lever
CS160008A

To replace a DIMM, follow these steps.

1. Turn off the switch.
2. Remove the power cord as shown in Figure 23.
3. Remove the front bezel as shown in Figure 22.
4. Remove the top cover as shown in Figure 24.
5. Press down the locking levers on both sides of the DIMM as shown in Figure 29.
6. Pull the DIMM up to remove it from the slot.
7. Place a new DIMM in the slot, making sure to properly position the DIMM's alignment keys. Make sure the DIMM is pressed firmly into the socket.
8. Pull up the locking levers on both sides of the DIMM, and snap the DIMM into the socket.
9. Replace the top cover.
10. Replace the front bezel.
11. Reconnect the power cord.
12. Turn on the switch.

Memory option

The Contivity 1600 ships with 64 Mbits of memory installed. An additional 64 Mbits can be installed. To increase the memory, contact Nortel Networks Customer Support.

Chapter 5
Contivity 600 Option Installation

This chapter describes how Nortel Networks trained service personnel can change existing hardware configurations, including installing LAN and WAN cards for the Contivity 600.

Note: The expansion slot is renamed to Slot 2 by the Contivity 600 software.

Warning: Wear an antistatic band when handling electronic components for the Contivity 600 to avoid damaging them.

Note: Unplug the power cord from the rear of the Contivity 600 before installing LAN or WAN interface cards.

To install LAN or WAN cards you must:

1. Remove the power cable.
2. Remove all signal cables.
3. Remove the four screws on the bottom of the switch.
4. Slide the inner chassis out of the casing.
5. Unscrew the PCI interface bracket screw and remove the PCI interface card or blank PCI bracket.
6. Install a new PCI interface, being careful to completely press the card into the PCI connector on the mother board.
7. Replace the chassis (along the guide rails) in the outer casing.
8. Replace the bottom screws.
9. Reconnect the power cord to turn the switch back on.

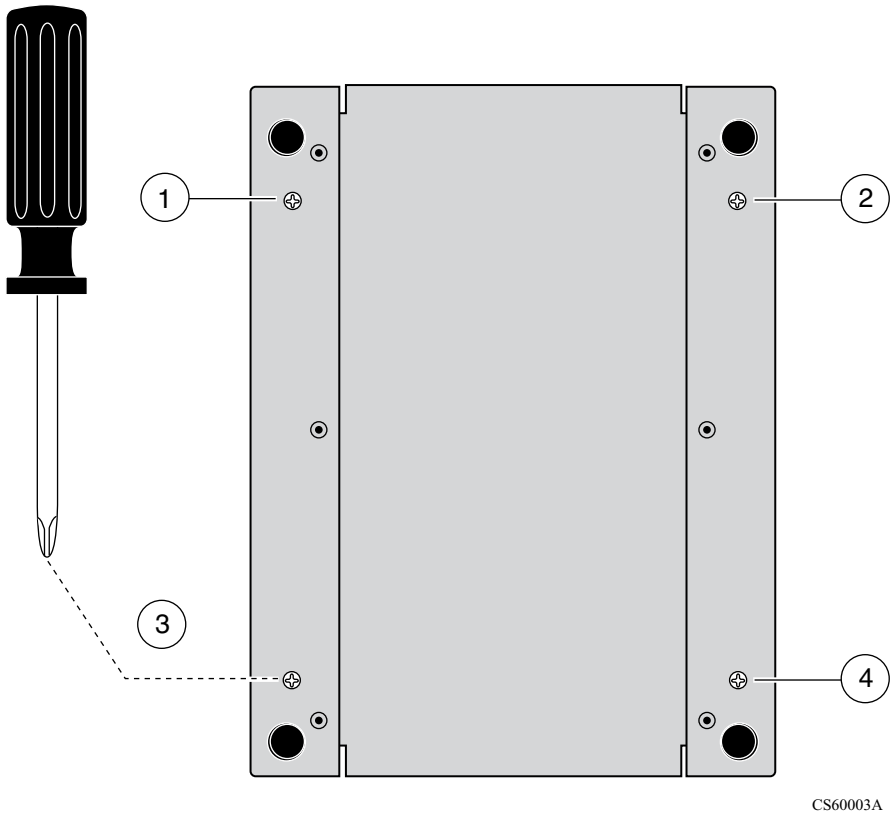
This procedure is detailed in the steps that follow.

Opening the Contivity 600

To access the system, you must remove remove all cables, the power cord, and the bottom metal screws and pull the chassis from the rear. You need a Phillips screwdriver to access the system.

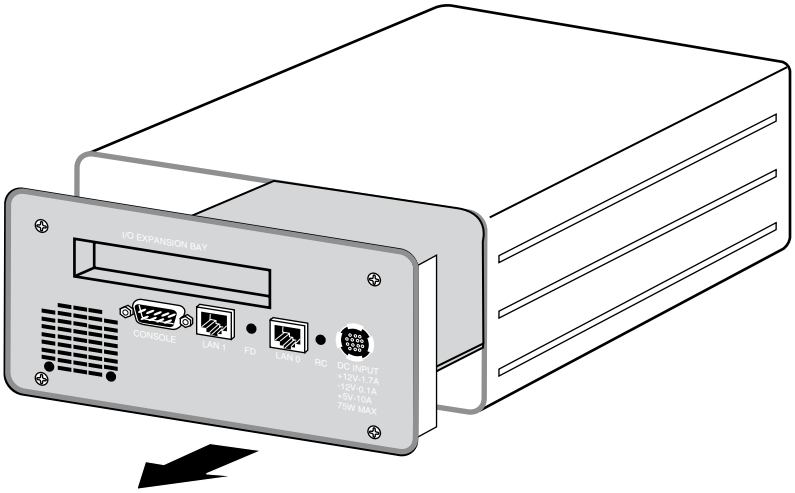
1. Unplug the switch's power cord from the back of the chassis.
2. Unplug all the signal cables.
3. Turn the switch over to see the bottom of the box.
4. Using the Phillips screwdriver, remove the four screws that secure the bottom to the chassis, as shown in Figure 30.

Figure 30 Removing the bottom screws



5 Firmly pull the chassis towards you to loosen it from the casing. You can gently shake it so that it slips outwards and into your hand or you can pull gently on the I/O expansion bay. Figure 31 shows how to remove the system from the chassis.

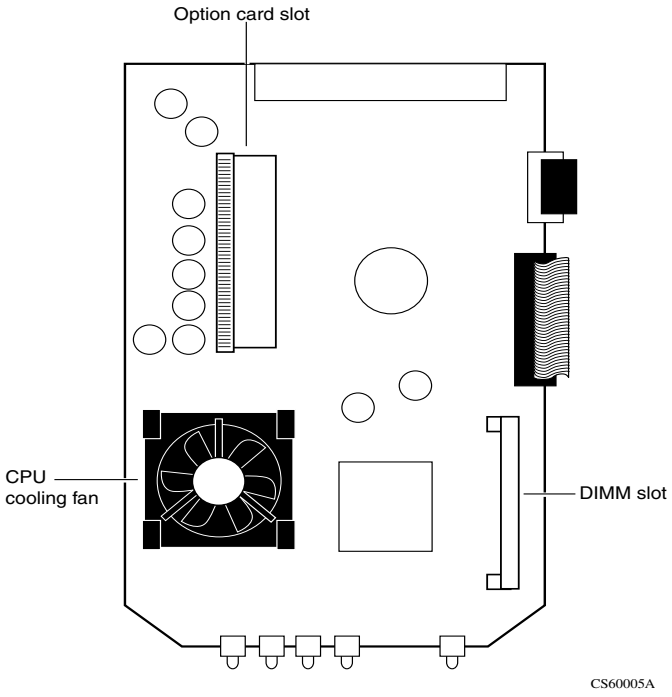
Figure 31 Removing the system from the chassis



Contivity 600 system board layout

Figure 32 shows the Contivity 600 system board, in particular the option card slot, DIMM memory, and the CPU cooling fan.

Figure 32 Contivity 600 system board



Warning: Beware of danger if the battery is incorrectly replaced. Replace with the *same* or an *equivalent battery* only, as recommended by the manufacturer's instructions.

Danger: In spite of the above warning, which is mandated for regulatory approval, *you should not change the battery.* If you suspect a dead battery, contact Nortel Networks Customer Support.

Installing Contivity 600 option cards

This section shows you how to install LAN or WAN option cards in the Contivity 600.

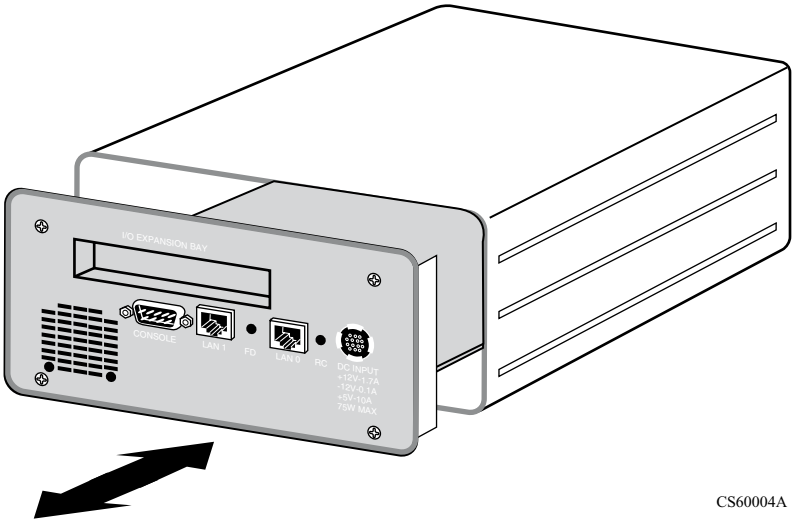
1. Remove the blank PCI bracket by inserting a Phillips screw driver into the slot at the right of the blank PCI bracket and rotating the screw counter-clockwise.
2. Lift out the blank PCI bracket, and slide the replacement card into the intended slot.

Note: Be careful not to bend the copper fingers in the slot.

Make sure the card seats firmly and evenly in the card slot and that the left tabbed-end of the card is seated in its slot. If the card is not seated properly, it will not work.

3. Replace the screw at the right end of the PCI bracket.
4. Slide the system into the chassis as shown in Figure 33.

Figure 33 Replacing the system into the chassis



5 Replace the four Phillips-head screws to secure the bottom panel.

6 Reconnect the signal cables.

7 Reconnect the power cord to restart the Contivity 600.

Memory option

The Contivity 600 ships with 64 Mbits of memory installed. No additional memory can be installed.